Video-PX9000 series / Video-PX498 series/
Video-498PCI series

**NVIDIA GeForce™ 9000 series**

# User's Manual

**Version 6.00**

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# Introduction

Your PC is now more visual than ever. Supercharge this visual experience with the NVIDIA® GeForce® 9000 series GPU — there is no better investment to provide more vibrant photos, smoother videos, and more realistic gaming.

**Bring your PC to life**
Enhance Windows Vista, including the 3D Aero interface and Flip 3D browser. Offload video processing tasks from your CPU to your GeForce graphics card and enjoy stutter-free, vibrant high-definition video playback with the revolutionary NVIDIA® PureVideo® HD engine. Easily manage and display crisp and vivid photos, fluidly zoom around 3D-enabled cities in Google Earth, and swiftly manipulate complex 2D Acrobat documents. The GeForce 9000 series GPU enables your PC to be a one-stop multimedia hub!

**Realistic gaming for less**
The GeForce 9000 GT GPU has a 2x performance increase over the comparable 8 series graphics card, allowing you to play the latest PC games without costing you a bundle. So now you can enjoy popular gaming titles the way they were meant to be played.

**Increase your performance**
Double the power of a single graphics card with NVIDIA SLI® technology[1]. This GPU can be paired with an identical GeForce 9000 series graphics card for up to 2x the performance of a single card set-up. Compatible with PCI Express and the new PCI Express 2.0 bus architecture, GeForce 9000 series GPU offers a future-proofing bridge to tomorrow's most bandwidth-hungry games and 3D applications.

1 - NVIDIA SLI - certified versions of GeForce PCI Express GPUs only.

# Features and Specifications

## Video- PX9000 series

### NVIDIA® PureVideo® HD Technology[1]

The combination of high-definition video decode acceleration and post-processing that delivers unprecedented picture clarity, smooth video, accurate color, and precise image scaling for movies and video.

### Discrete, Programmable Video Processor

NVIDIA PureVideo is a discrete programmable processing core in NVIDIA GPUs that provides superb picture quality and ultra-smooth movies with 100% offload of H.264 video decoding from the CPU and significantly reduced power consumption.

### Dynamic Contrast Enhancement

Provides spectacular picture clarity with frame-by-frame optimization.

### NVIDIA SLI® Technology[2]

Delivers up to 2x the performance of a single GPU configuration for unequaled gaming experiences by allowing two graphics cards to run in parallel. The must-have feature for performance PCI Express® graphics, SLI dramatically scales performance on today's hottest games.

### PCI Express 2.0 Support

Designed to run perfectly with the new PCI Express 2.0 bus architecture, offering a future-proofing bridge to tomorrow's most bandwidth-hungry games and 3D applications by maximizing the 5 GT/s PCI Express 2.0 bandwidth (twice that of first generation PCI Express). PCI Express 2.0 products are fully backwards compatible with existing PCI Express motherboards for the broadest support.

1 - Feature requires supported video software. Features may vary by product.
2 - NVIDIA SLI - certified versions of GeForce PCI Express GPUs only.

## Operating Systems

- Built for Microsoft Windows 7, Vista
- Windows XP

## Compatibility

- NVIDIA Unified Driver Architecture (UDA)
- Fully compliant with OpenGL including OpenGL 2.0
- Microsoft DirectX 9, 10
- WHQL-certified for Windows 7, Windows Vista, Windows XP

# System Requirement

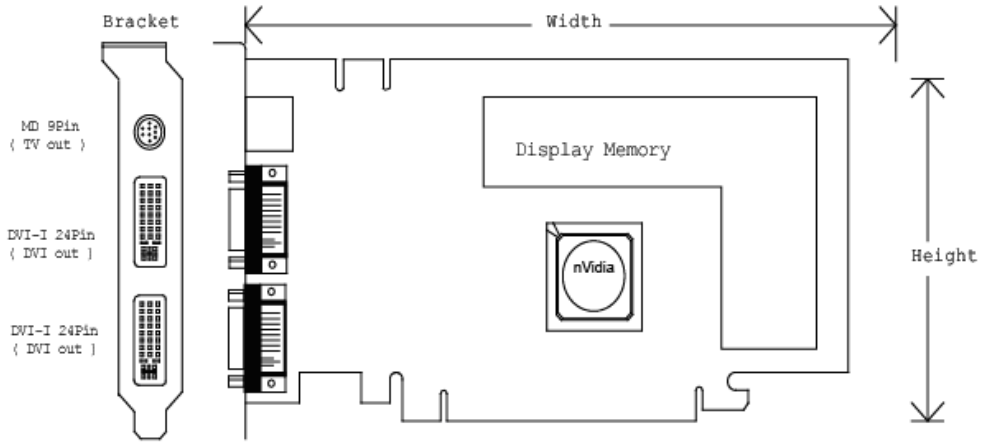
- Intel Pentium® P4 or compatible system with PCI-Express Bus (x16) Extension Slot or PCI slot (depend on card purchased)
- CD-ROM drive, Quad speed or faster
- Hard Drive with at least 200MB Free space
- MS Windows® Vista/XP operating system
- Minimum 400 Watt power supply (Minimum recommended power supply with +12 Volt current rating of 20 Amp Amps.)
  Minimum 500 Watt for SLI mode system
  (Minimum recommended power supply with +12 Volt current rating of 28 Amp Amps.)

# Check List

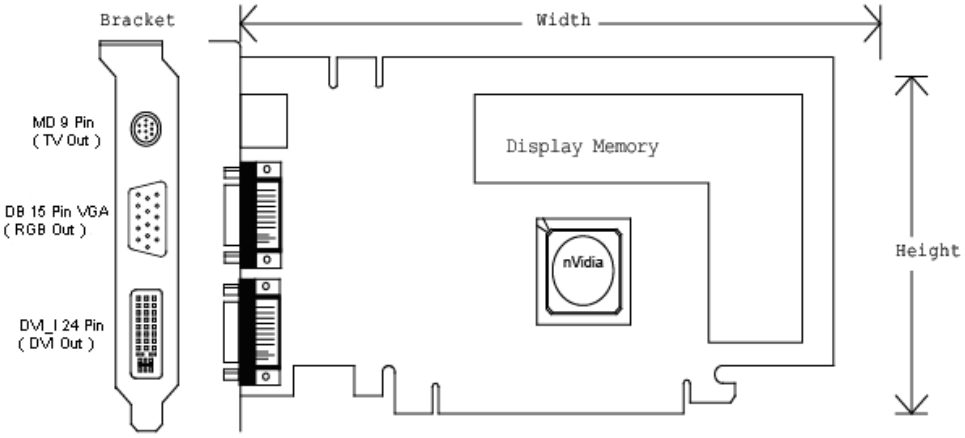
- Video-PX9000 series, Video-PX498 or Video-498PCI series Multimedia Accelerator
- HDTV/TV out - MD 9 pin converter cable for Composite, S-Video or Component - Video-PX9000 series, Video-PX498-DLP
- DVI to VGA converter - Video-PX9000 series
- LFH 59 pin to Dual DVI adapter cable (part# CB59D002) – Video-PX498-DLP, Video-498PCI-DLP
- LFH 59 pin to Dual VGA adapter cable (part# CB59D001) – Video-PX498-LP, Video-498PCI-LP
- Converter cable (converts MD-9pin to VGA DB-15) – Video-PX498-Twin, Video-498PCI-Twin
- Software & Documents CD
- Quick Start Guide (Printed)

# Hardware Description

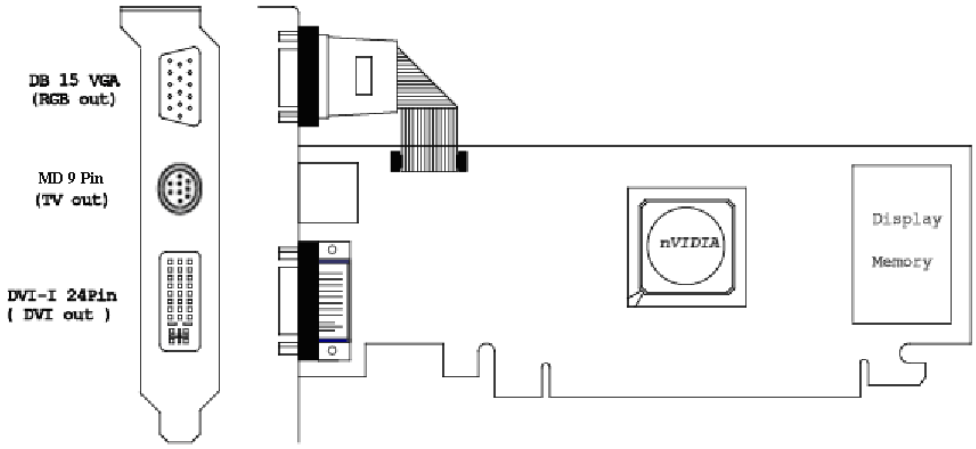
Video-PX9500GT-LX



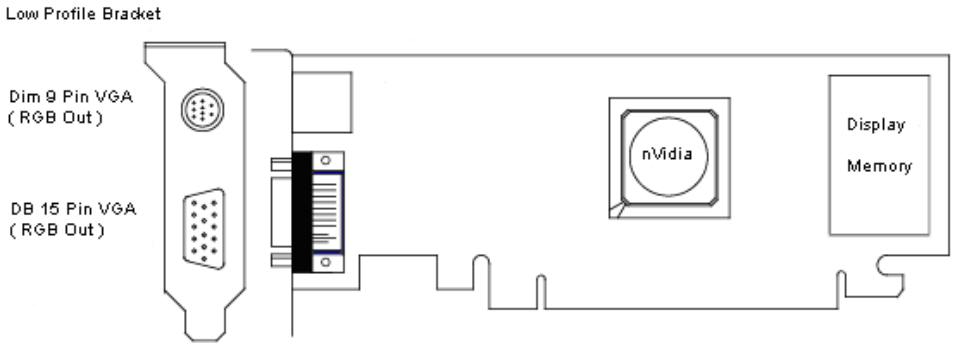

Video-PX9500GT-LE / Video-PX9500GT-DE / Video-PX9400GT-LX / Video-PX9400GT-EX



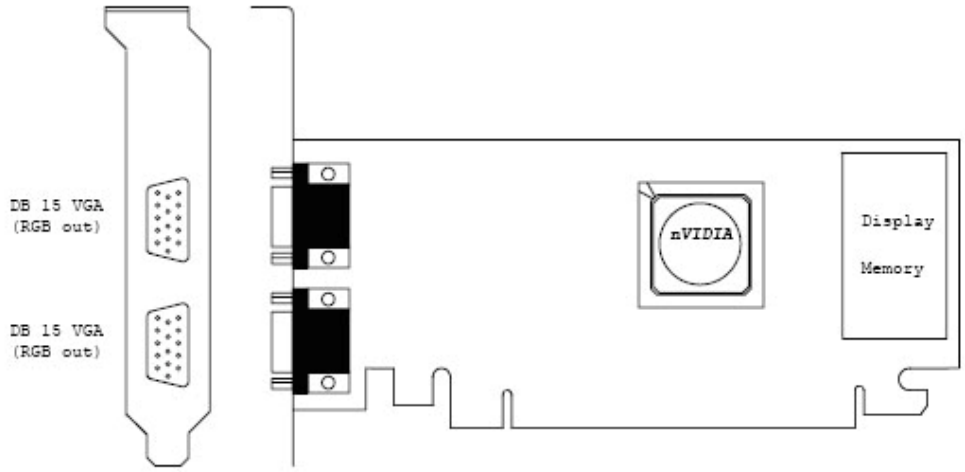
## Video-PX9500GT-DVI / Video-PX9400GT-DVI



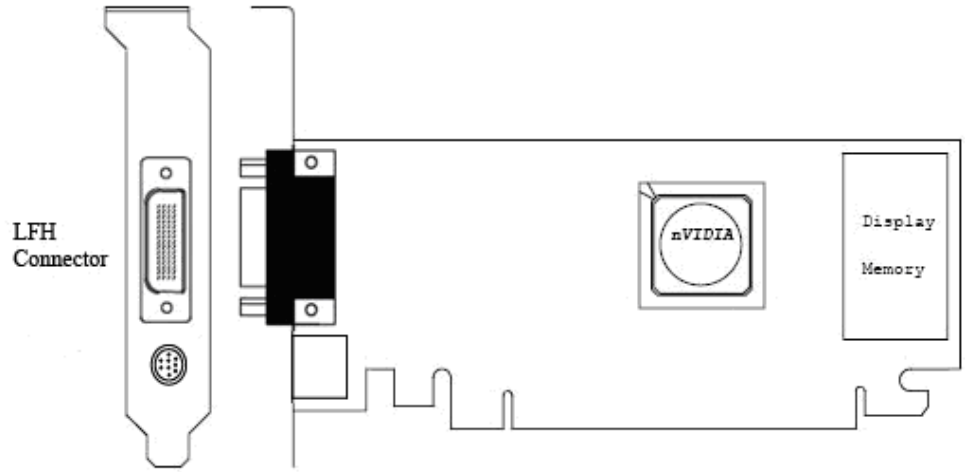

## Video-PX498-Twin



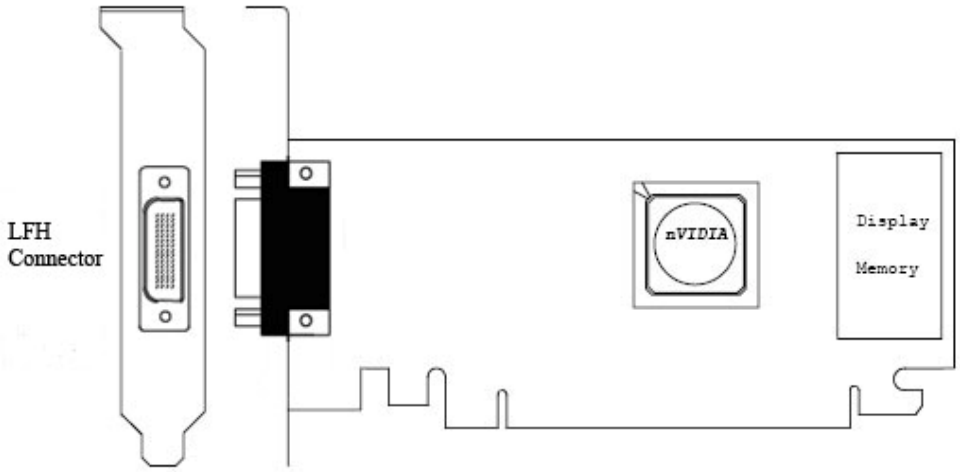
Video-PX498-DT



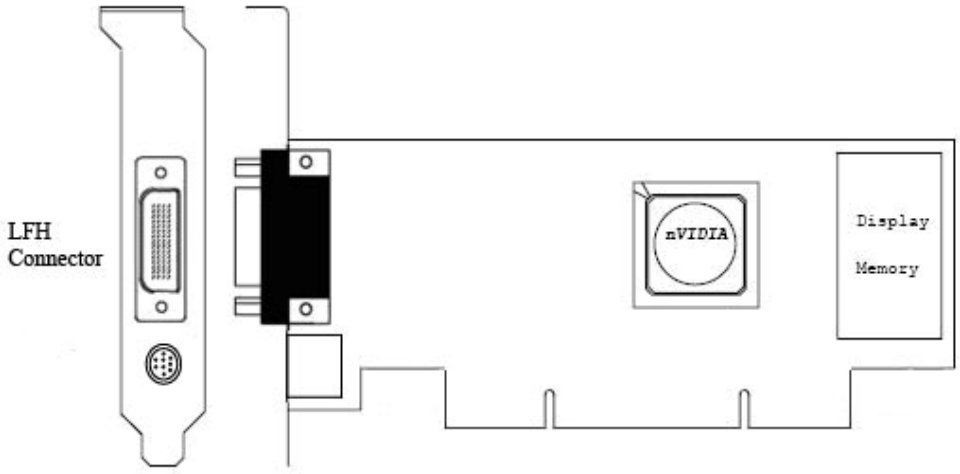

Video-PX498-DLP



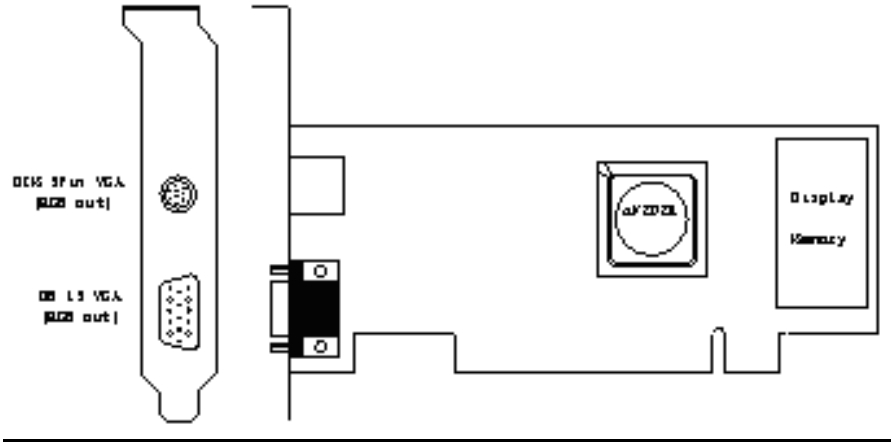
Video-PX498-LP




Video-498PCI-DLP / Video-498PCI-LP



## Video-498PCI-Twin

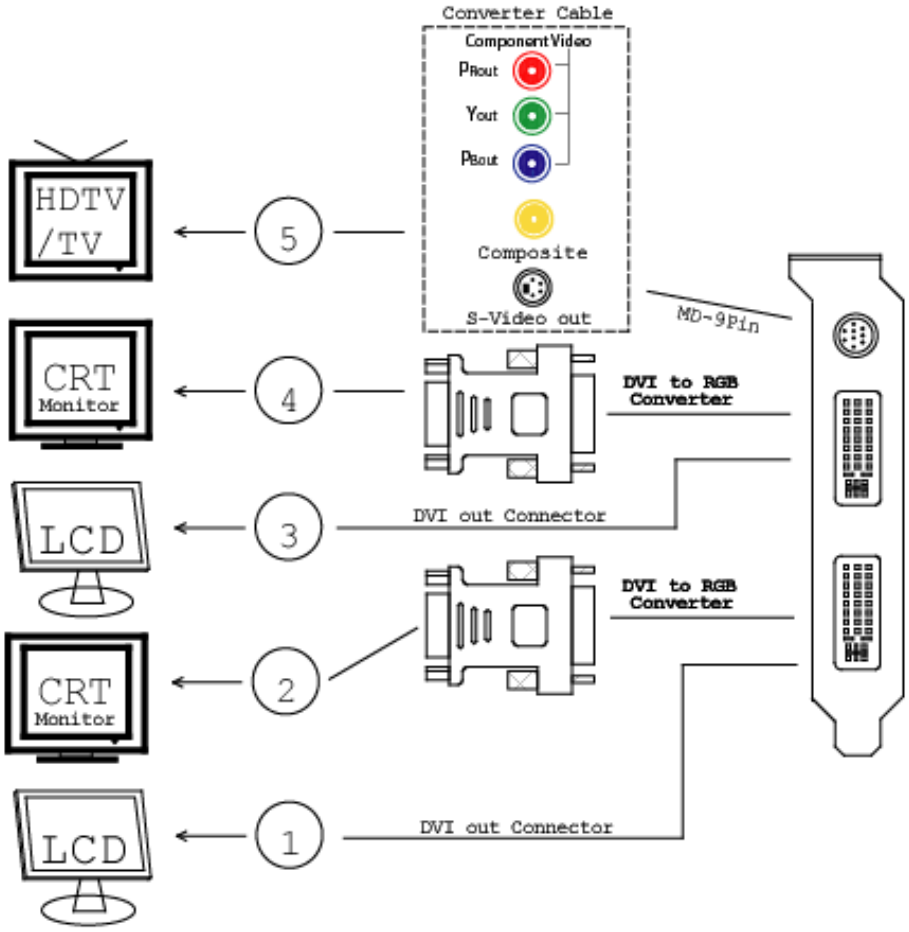


| Product name / PCB version | | Core Chipset | PCB Size | Memory Size | |
|---|---|---|---|---|---|
| Video-PX9500GT-LX | 82488A | NVIDIA GeForce 9500GT | W=6.66" X H=4.376" | 32M X 32 DDR3 | 512MB |
| Video-PX9500GT-LE | 82498A | NVIDIA GeForce 9500GT | W=6.66" X H=4.376" | 64M X 16 DDR2 | 1GB |
| Video-PX9500GT-DE | 82498A | NVIDIA GeForce 9500GT | W=6.66" X H=4.376" | 32M X 16 DDR2 | 512MB |
| Video-PX9400GT-LX | 82498A | NVIDIA GeForce 9400GT | W=6.66" X H=4.376" | 32M X 16 DDR2 | 512MB |
| Video-PX9400GT-EX | 82498A | NVIDIA GeForce 9400GT | W=6.66" X H=4.376" | 64M X 16 DDR2 | 1GB |
| Video-PX9500GT-DVI | 82498B | NVIDIA GeForce 9500GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-PX9400GT-DVI | 82498B | NVIDIA GeForce 9400GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-PX498-DT | 82498E | NVIDIA GeForce 9400GT | W=6.875" X H=2.78" | 64M X 16 DDR2 | 1GB |
| Video-PX498-Twin | 82498E | NVIDIA GeForce 9400GT | W=6.875" X H=2.78" | 64M X 16 DDR2 | 1GB |
| Video-PX498-DLP | 82498F | NVIDIA GeForce 9500GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-PX498-LP | 82498F | NVIDIA GeForce 9500GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-498PCI-Twin | 82498M | NVIDIA GeForce 9400GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-498PCI-DLP | 82498Q | NVIDIA GeForce 9500GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |
| Video-498PCI-LP | 82498Q | NVIDIA GeForce 9500GT | W=6.875" X H=2.713" | 64M X 16 DDR2 | 1GB |

**Accessories for VGA cards are sold separately. Please go to http://Store.anvshopper.net for details**

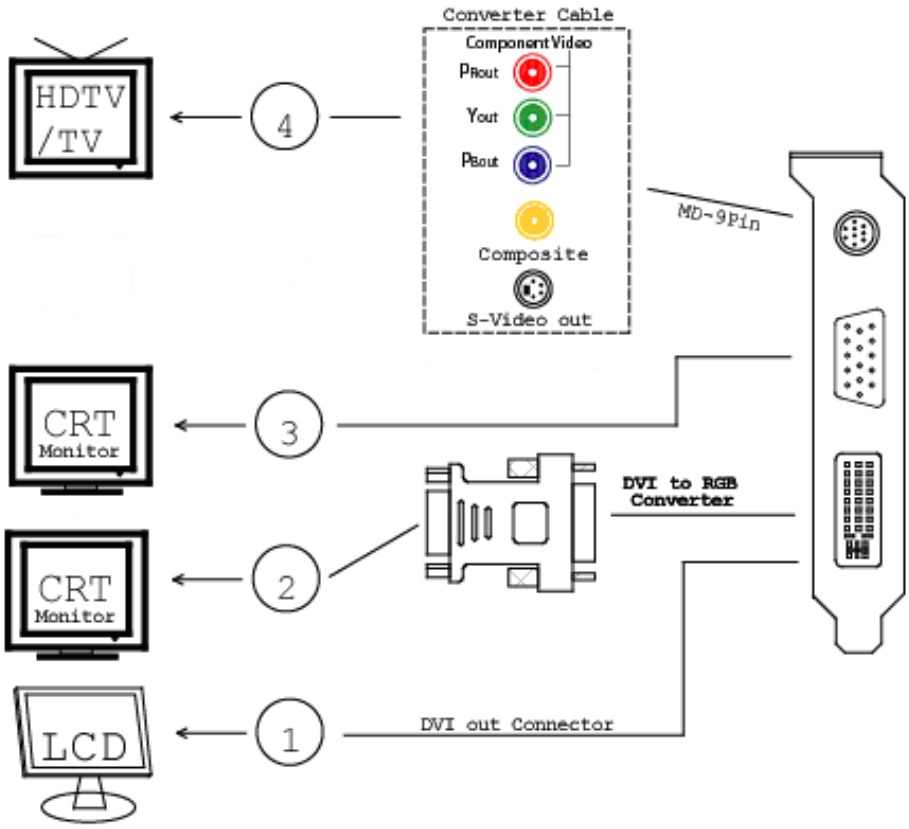
# Display Devices Output

Video-PX9500GT-LX



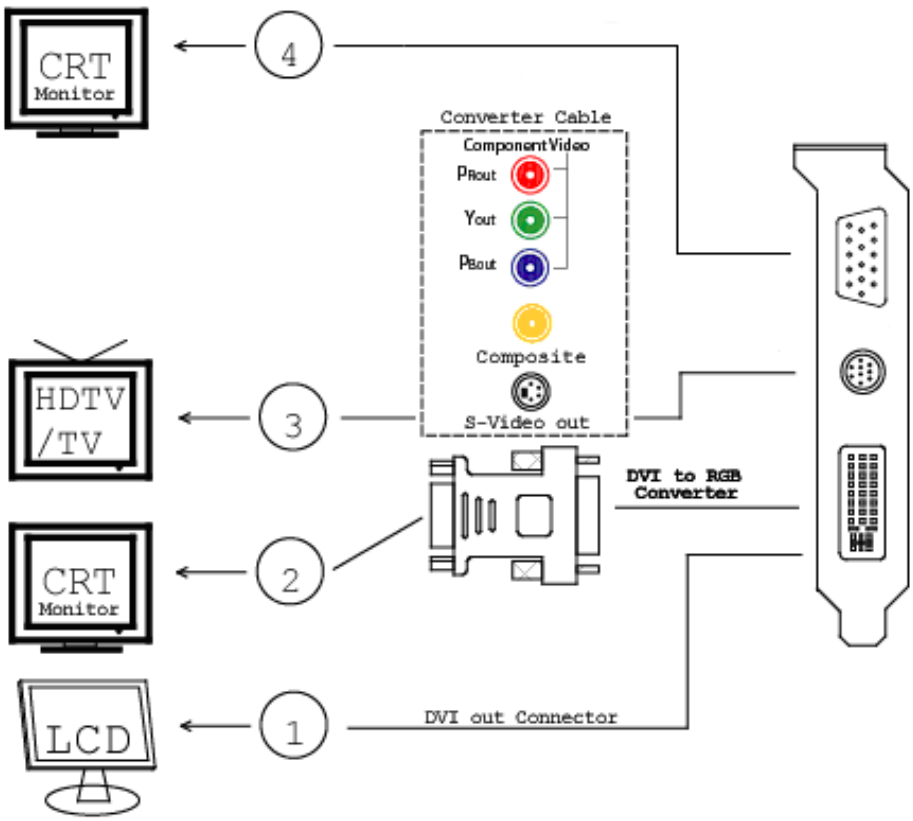

1. DVI out - DVI connects to LCD display panel.
2. DVI converts to RGB with DVI-RGB converter for VGA out.
3. DVI out - DVI connects to LCD display panel.
4. DVI converts to RGB with DVI-RGB converter for VGA out.
5. TV-Out – MD-9 pin connector for Component, S-Video or Composite Out.

Video-PX9500GT-LE / Video-PX9500GT-DE / Video-PX9400GT-LX / Video-PX9400GT-EX

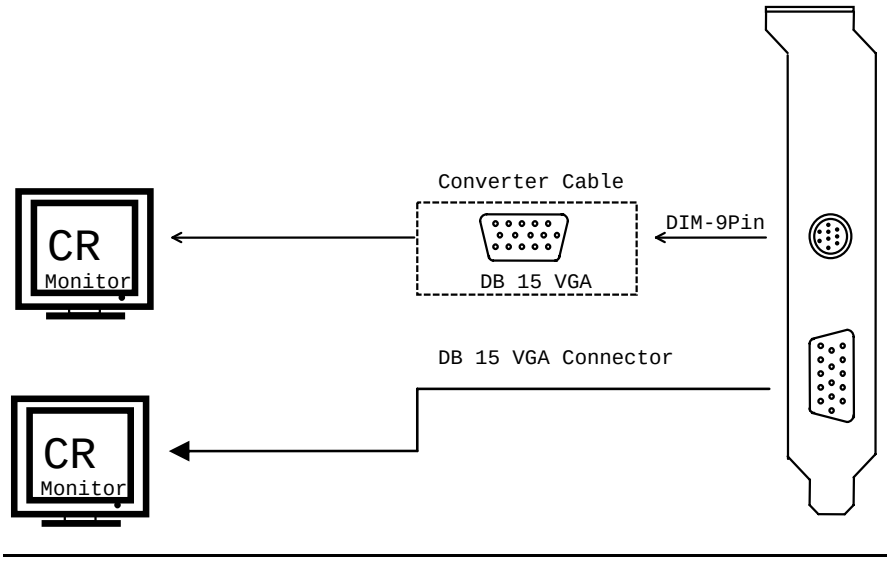



1. DVI out - DVI connects to LCD display panel.
2. DVI converts to RGB with DVI-RGB converter for VGA out.
3. VGA out - DVI connects to CRT monitor.
4. TV-Out – MD-9 pin connector for Component, S-Video or Composite Out.

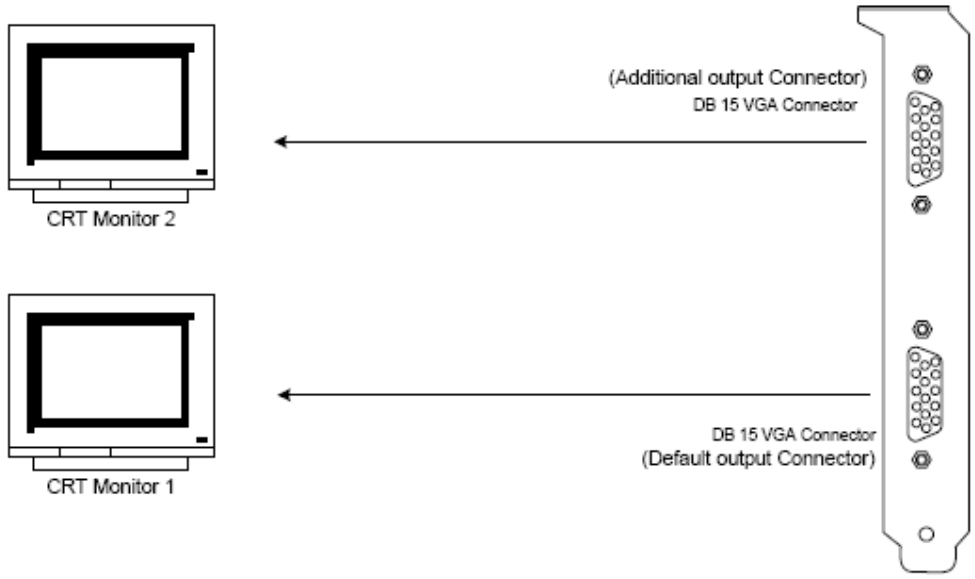
Video-PX9500GT-DVI / Video-PX9400GT-DVI



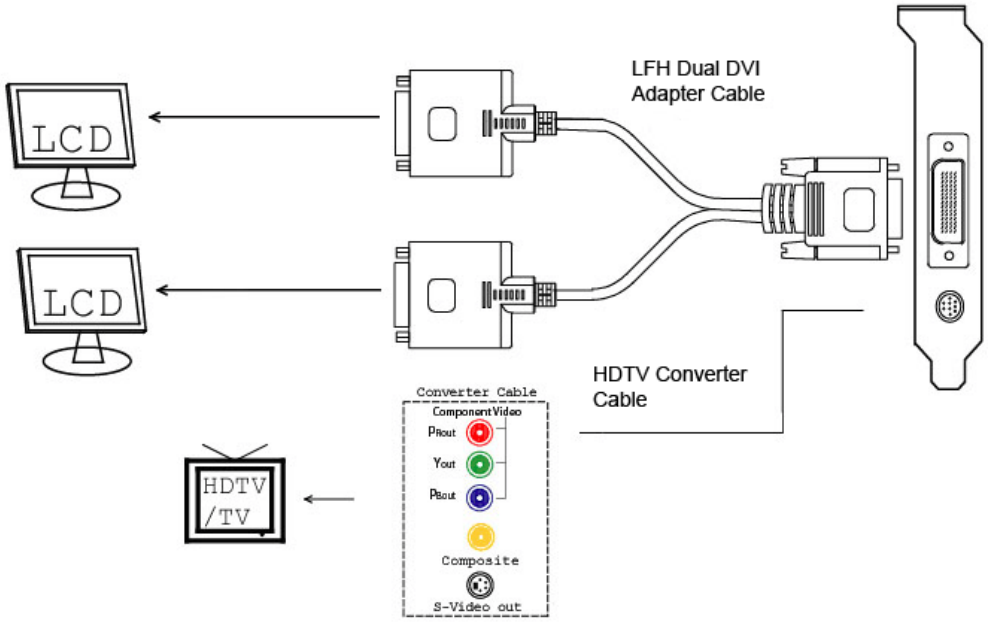
## Video-PX498-Twin / Video-498PCI-Twin



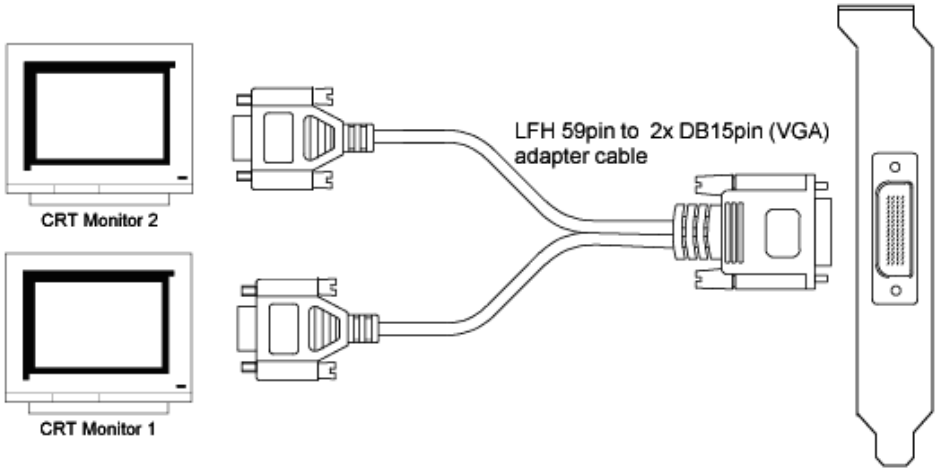

## Video-PX498-DT



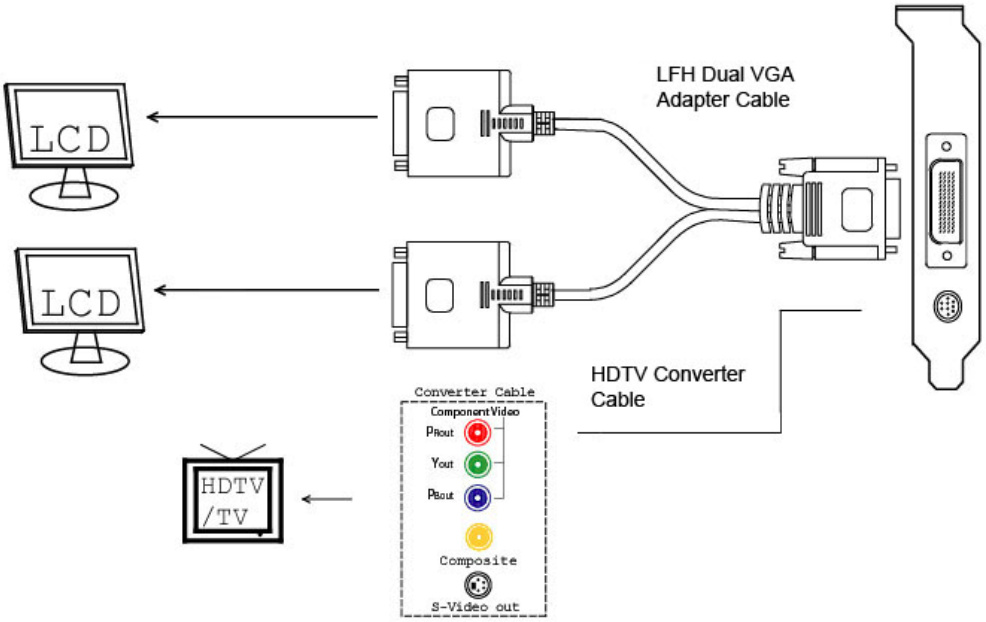
Video-PX498-DLP / Video-498PCI-DLP




Video-PX498-LP

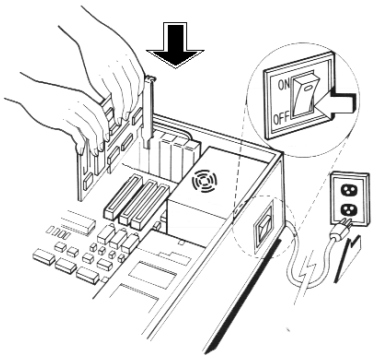


Video-498PCI-LP



# Hardware Installation

## *Installation Procedures*




***!! WARNING!!***

Discharge static electricity by touching the **GROUND** such as metal part of your case connected with good power ground before you handle the electronic circuit boards.

*The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of any components by unauthorized service personnel. If you do not feel comfortable performing the installation, consult with a qualified computer technician.*

## *Steps:*

1. Turn OFF all powers to your system, including any peripherals (printer, external drives, modem, etc.).
2. Disconnect the power cord and the monitor cable from the back of the computer.
3. Unfasten the cover mounting screws on your system and remove the system cover. Refer to your system user manual for instructions to determine the location of the mounting screws.
4. Remove the retaining screw that holds the slot cover in place. Slide the slot cover out and put the screw aside (you will need it to secure the adapter).
5. To install the adapter in PCI-E expansion slot, carefully line up the gold-fingered edge connector on the adapter directly above the expansion slot connector on the motherboard. Then press the adapter into place, completely. Use the (remaining) screw you removed to secure the adapter-retaining bracket in place.
6. Replace the computer cover. Secure the cover with the mounting screws you removed in Step 3.

You have now completed the installation of your new graphics adapter on your system.

## Upgrade Steps:

Add or change your video adapter to an existing system, you may precede a few steps before you install the new hardware and software (video display driver). The followings are some of the considerations:

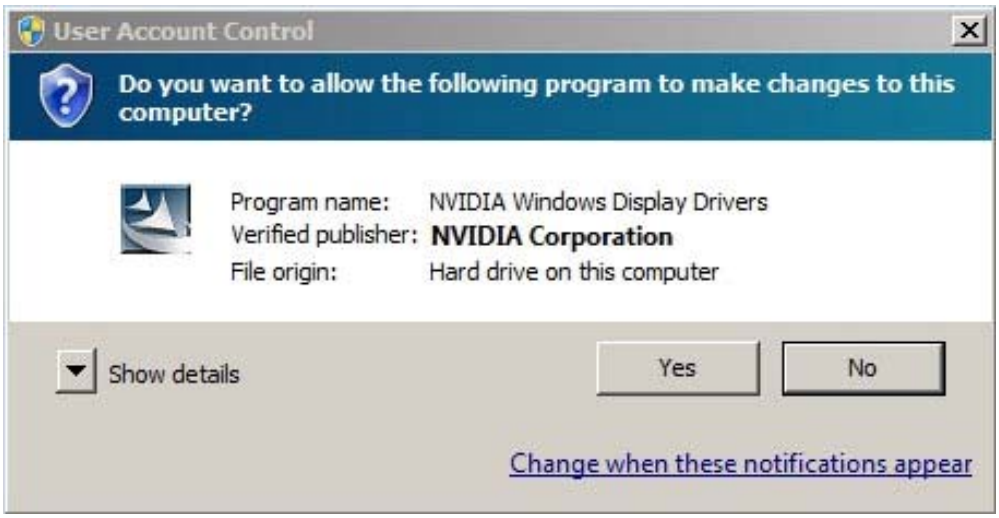
1. To add a new adapter, ensure the mainboard has available IRQ for new devices, and there is no conflict between each other.
2. If you try adding this video adapter to an ALL-IN-ONE mainboard (which video port built-in already), then you have to disable that port first – 1) In the . Otherwise, that will be a problem for the new video adapter setup.
3. The driver installation for system upgrade is the same as below, if error occurs when you proceed to step 1, 2 or 3, please consult with your system dealer or the existing hardware manufacturer support.

# Software Installation

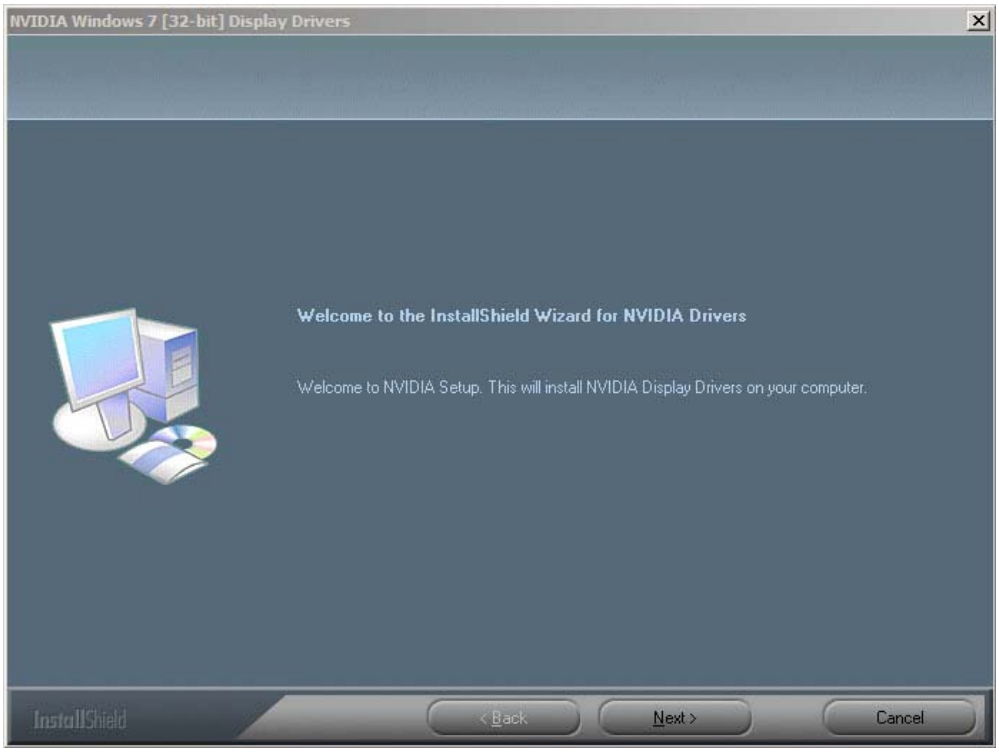
## *Windows® 7 and Vista Driver Installation*

### InstallShield® Program:

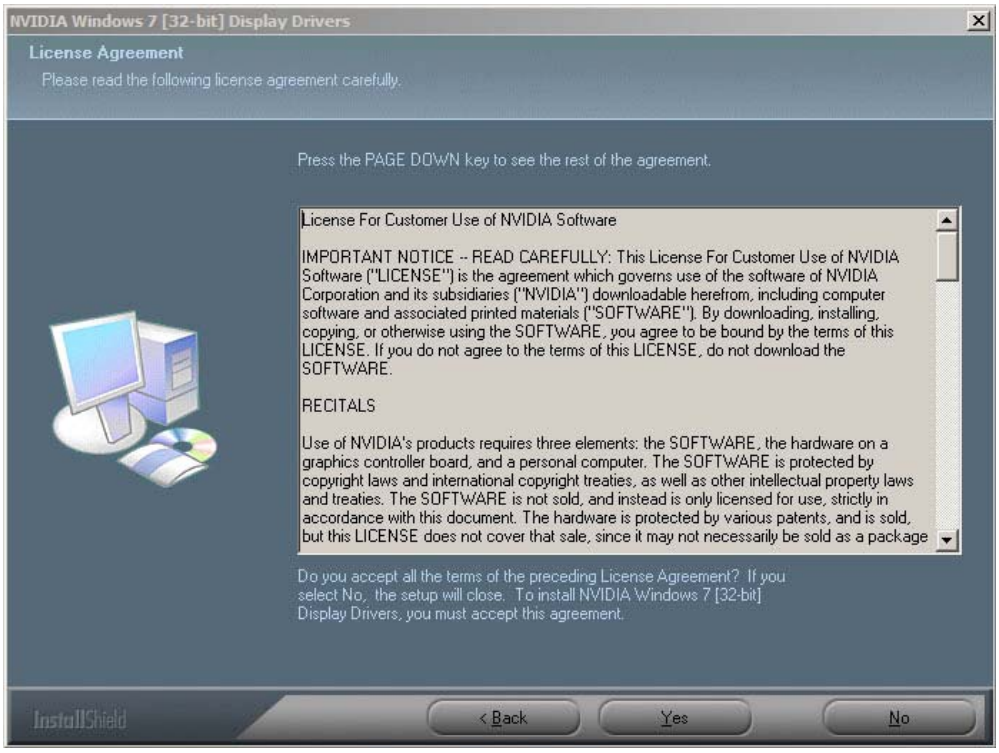
Microsoft Windows® 7 and Vista detects this new hardware and places appropriate display driver from its system folder automatically - it doesn't matter if you have added a new driver or changed the existing one. To maximize the video board acceleration and increase its performance, you may install the manufacturer's display driver as follows:



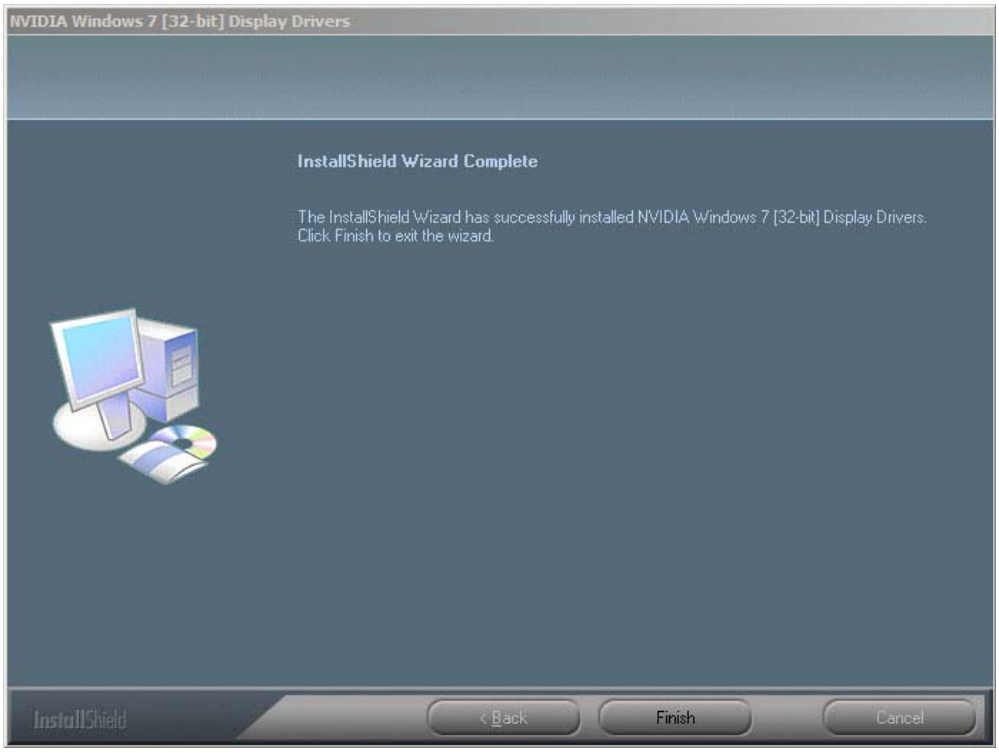

1. Click Yes to continue




2. Click on “Next” to continue the process.




3. Click on “Yes” to agree to license agreement and continue.



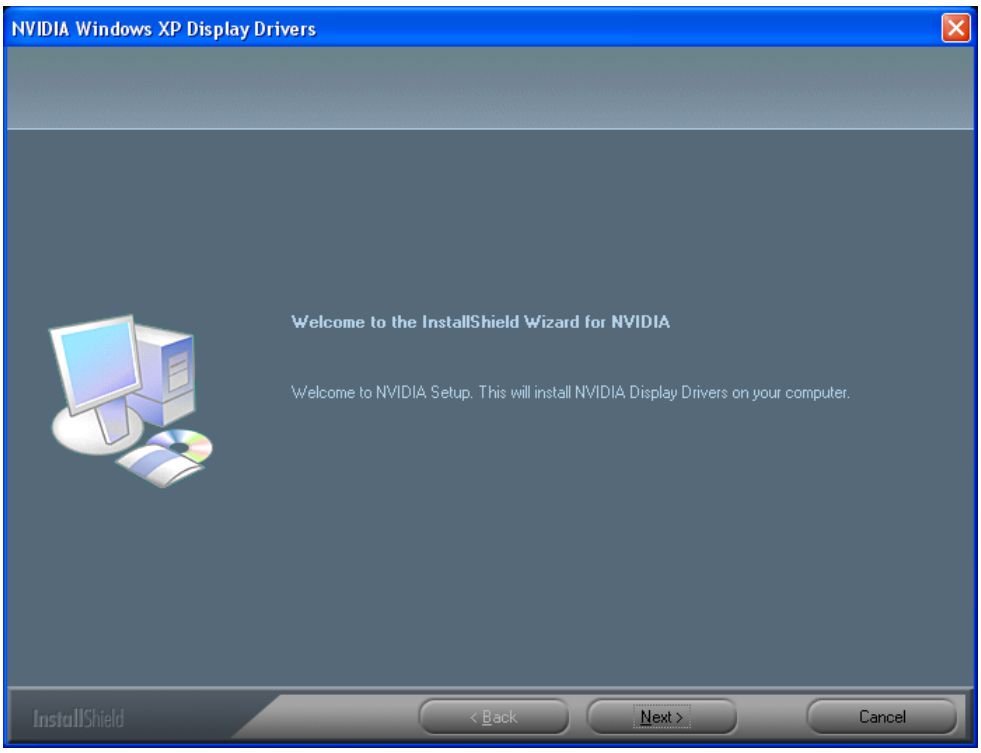

4. Click on “Finish” to complete the installation.

## *Windows® XP Driver Installation*

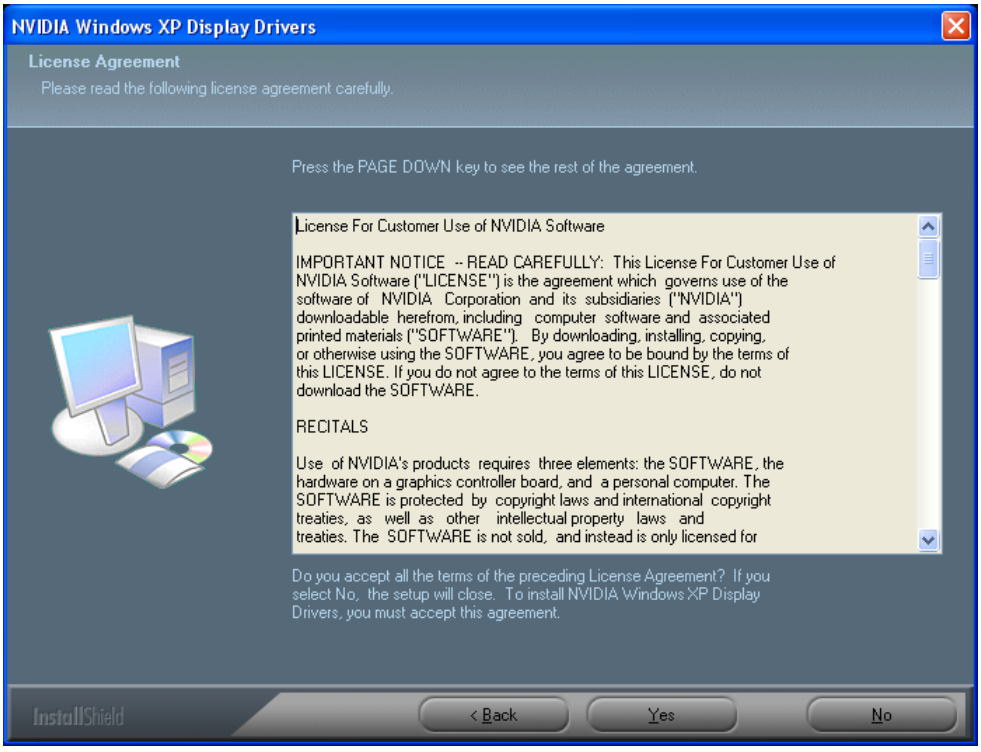
### InstallShield® Program:

Microsoft Windows® XP detects this new hardware and places appropriate display driver from its system folder automatically - it doesn't matter if you have added a new driver or changed the existing one. To maximize the video board acceleration and increase its performance, you may install the manufacturer's display driver as follows:

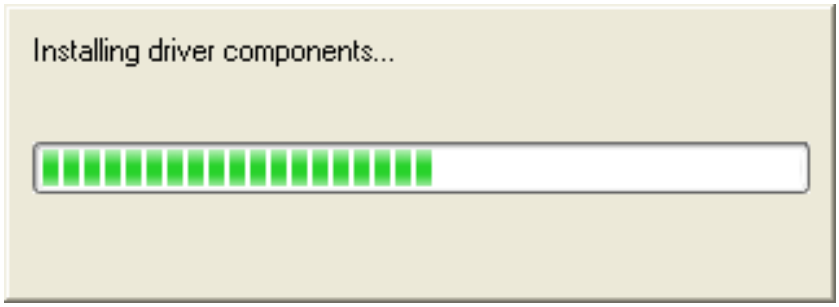
1. Autorun feature brings-up the "Welcome Screen", and you may point to "Display Driver" and then press on it.



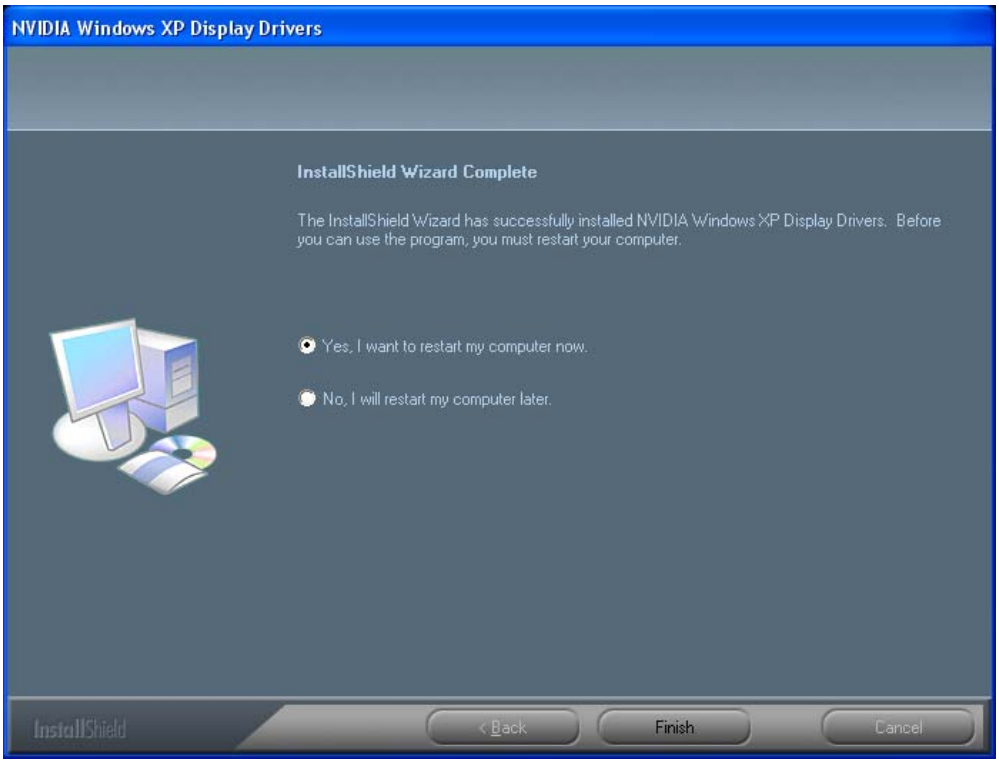

1. Click on “Next” to continue the process.




2. Click on “Yes” to agree to license agreement and continue.




3. The Windows system will copy all driver files from source media to your local hard disk; please wait until the process has completed.




4. Click on “Finish” to restart your computer, the new display driver will be in place after Windows boots-up.

**Notice:**

We believe that the all the installation steps mentioned above are clear from manufacturer software’s CD to your operating system. Any procedures other than these processes have not been specified.

# Technical Assistance

**Q:** Why is the display shifted or changed sizes when I switch display modes?

**Explain and Suggestion:**

Some monitors lack auto-sizing features or just do not synchronize properly to the video board output. In some cases, horizontal and vertical display adjustments may be necessary. Use the monitor control panel functions to adjust screen.

In other cases, mode type and refresh rate adjustments may be necessary. Use the utility program, which provided by video card manufacturer or production developer. To center the display with normal type (mode 3), and to reduce (decrease) the refresh rate with the monitor's specification.

**Q:** What kind monitors can display 800x600 modes or higher resolution mode?

**Explain and Suggestion:**

To display 800x600 resolution at 60Hz refresh rate, the monitor must be capable of synchronizing a 31.5KHz horizontal scan rate (e.g., NEC 2A, 3D). At 72Hz refresh rate, the monitor must be capable of synchronizing a 48.0KHz scan rate (e.g., Sony HG 1304, NEC 4D, 5D, Seiko 1450).

To display 1024x768 interlaced mode; the monitor must be capable of synchronizing a 35.5KHz horizontal scan rate (e.g., NEC 3D, Seiko 1430 or 1440). To display 1024x768 non-interlaced mode at 60Hz, the monitor must be capable of synchronizing a 48.7KHz scan rate (e.g., Sony HG 1304, NEC 4D, 5D, Seiko 1450).

To display 1024x768 non-interlaced mode at 70Hz, the monitor must be capable of synchronizing a 56.4KHz scan rate (e.g., NEC 4D).

**Q:** System hangs-up after installing video driver.

**Explain and Suggestion:**

Today, most video drivers are developed for 32-bit processing and may require a channel to Code/Decode. Conflict between device drivers and TSR (terminate-and-stay-resident) programs will inverted the display, and are particularly effectual at crashing computer. The most effective way to check for conflicts is to replace with the original video driver, or delete and re-install the current video driver to the system.

Accomplishing IRQs (Interrupt Request Query) settings or troubleshooting the conflicts on hardware source may necessary. Most AGP video cards designed for Plug-n-Play, that means video card IRQ's setup which controls by main board’s (motherboard) circuitry and BIOS. Physically pulling out other devices from system, and re-starts the computer. Confirm and modify your IRQ addresses with qualified computer technician.

**Q:** Multiple images or unreadable screen after loading video driver.

**Explain and Suggestion:**

There are a variety of reasons why the display might be distorted. One common reason is a monitor mis-match. Some older multi-frequency monitors are unable to switch video modes without being turned off, then turned on again.

If the problem occurring in windows, make sure that you have loaded that proper video driver, and that the driver is compatible with the monitor being used. Try re-configuring your application software to use a compatible video mode. If problem persist in windows, load the standard generic VGA driver. The generic VGA driver should function properly with virtually every video board and VGA (or SVGA) monitor available.

If that is an unsatisfactory solution, you may have to upgrade to a monitor that supports the desired video mode.

Some new monitors are also synchronizing this problem because built-in DDC (Data-Digital-Channel) feature. Sometime that DDC automatically setup the display frequency without loading video driver. Try to turn it off, or change settings of monitor type in your system.

**Q:** Selection of color, resolution and refresh rate combination that always backs to default after restart the system.

**Explain and Suggestion:**

Accordingly, there must be a bug (defected source-code) in video driver, or in the system. Debug the source-code or fix the error in video driver that should be done by the driver developer. Likewise, upgrade the video driver from the manufacturer or from the original software developer is necessary.

## *Technical Support*

In the event you have a technical problem with this product, please read the README files in the software CD_ROM. Updated drivers are available through Jaton Web site. Have following information handy when you contact technical support:

- ☑ Name of the product.
- ☑ Software Driver and Version.
- ☑ System Information, such as CPU speed, BIOS version, Monitor Specification, etc.
- ☑ Description of the problems including any error messages.

| | |
|---|---|
| **Telephone:** | (510) 933-8886 (Mon. - Fri. 9am-5pm PST) |
| **FAX:** | (510) 933-8887 |
| **email:** | vgasupport@jaton.com |
| **Website:** | www.jaton.com |

## *How to Obtain Warranty Service*

In the worldwide contact:

www.jaton.com

In United States contact:

**Jaton Corporation.**

Service Center

47677 Lakeview Blvd.,

Fremont, CA 94538

Tel: 510-933-8886

Fax: 510-933-8887

In Taiwan contact:

**Jaton Technology Co., Ltd.**

10F, NO.194, SEC.3, TA TUNG RD., HIS-CHIH,

TAIPEI, TAIWAN R.O.C.

Tel : 886-2-8647-1899

Fax : 886-2-8647-2679

In Australia contact:

**Jaton Technology pty, Ltd.**

Unit 8, 41-49 Norcal Road,

Nunawading, Vic 3131 Australia

Tel: (Mel) 03 9873 3999 (Syd) 02 9476 8781

Fax 03 9873 3933

The information in this document is subject to change without notice.

**FCC SHIELDED CABLE WARNING:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation,

"SHIELD INTERFERENCE CABLE (S) MUST BE USED ACCORDING TO FCC 15.27©."

CAUTION:

Changes or modifications not expressly approved by the Manufacturer could void your authority to operate this equipment in accordance with FCC rules and regulations.

**SOFTWARE LICENSE AGREEMENT:**

The Company grants the customer a non-exclusive, non-transferable license to use the software in this package for internal use on a single computer system. No other license of any kind is granted to any part of the product or any of the intellectual property therein.

# Limited Warranty

Manufacturer warrants that the products sold hereunder are free from defects in material and workmanship for a period of two (2) years from manufacturing date. This limited warranty applies only to the original purchaser of Jaton Product and is not transferable. This limited warranty does not apply if failure to Product Registration, or over thirty (30) days from purchase (original invoice date). This Limited Warranty does not cover any incompatibilities due to the user's computer, hardware, software or any related system configuration in which the Jaton Products interfaces. Manufacturer does not guarantee the compatibility of the video cards with any hardware components, systems or software that's available in the market.

If a product is deemed incompatible by Manufacturer tech support, the product in question is therefore not defective and thus no warranty will be provided.

Buyer acknowledges that the goods sold by Jaton Corp. are being used or incorporated into other products or systems, and the ultimate safety of those product or systems are the sole responsibility of Buyer. Buyer agrees that it and/or its customers are solely responsible and agrees that the use of Jaton Corp. products for any purpose cannot in any way be controlled by Jaton Corp., and buyer or its customers are responsible for verifying the accuracy and completeness of any information contained in, entered into, or used in connection with Jaton Corp. products. Buyer assumes all risks and liability for use of Jaton Corp. products in other products or systems. In addition, Jaton Corp. is not responsible for any archival, backup or disaster recovery services. In no event shall Jaton Corp. be liable for any damages of any kind sustained by Buyer, any customer of Buyer, any patient, or others for any suit or claim or demand arising from or related to the exercise of professional judgment and skill, or data entered into or used with the Jaton Corp. products.

It is the buyer's sole responsibility to do their own research and determine if the products to be purchased are compatible to the

hardware components, systems or software they intend to use with.

Proof of purchase will be required before any consideration by Manufacturer occurs.

**TRADEMARK AND COPYRIGHT:**

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

All Trademarks and Registered Trademarks belong to respective owners.

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## *Other Limits*

**The forgoing is in lieu of all other warranties, expressed or implied. Including but not limited to the implied warranties of merchantability and fitness for a particular purpose.** Manufacturer does not warrant against damages or defects arising out of improper or abnormal use of handling of the products; against defects or damages arising from improper installation (where installation is by persons other than Manufacturer), against defects in products or components not manufactured or installed by Manufacturer, or against damages result from non-manufacturer made products or components. This warranty does not apply if accident, abuse, nor misuse has damaged the Product. This warranty also does not apply to products upon which repairs have been affected or attempted by

persons other than pursuant to written authorization by Manufacturer.

## *Exclusive Obligation*

**This warranty is exclusive.** The sole and exclusive obligation of Manufacturer shall repair or replace the defective products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, and strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, Manufacturer shall not be liable for incidental, special, or consequential damage.

## *Other Statements*

Manufacturer's employees or representatives' **ORAL OR OTHER WRITTEN STATEMENTS DO NOT CONSTITUTE WARRANTIES**, shall not be relied upon by Buyer, and is not a part of the contract for sale or this Limited Warranty.

## *Terms and Conditions*

| | |
|---|---|
| **Direct Jaton Customer:** | This warranty applies only for a period of two (2) years from purchase date of Jaton original invoice. |
| **Reseller/ Vendor:** | This warranty applies only for a period of two (2) years from manufacturing date. |
| **Registered User:** | This warranty applies only for a period of two (2) years from purchase date and register within 30 days of purchase date from legal reseller. |
| **Others:** | If the products do not conform to this Limited Warranty (as herein above described), Manufacturer should |

charge services such as repair, replacement whether based on its costs. Shipping and installation of the replacement Products or replacement parts shall be at User's expanse.

## *Services agreement:*

(1) All applicants shall complete service request form from Manufacturer.

(2) All returned checks will be charged a $20.00 fee by Manufacturer.

(3) All repair and replacement services allow 4-6 weeks from the date of receiving by Manufacturer.

(4) All products without warranties require service processing fee $20 (payment in advance), which is not refundable.

## *Entire Obligation*

This Limited Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in force and effect. Some states do not allow limitation of implied warranties, or exclusive or limitation on product incidental or consequential damages, so above limitation may not apply to you. This warranty gives you specific legal rights. You may have other rights, which may vary from state to state.

This warranty applies only to this product, and is governed by the law of the State of California.

# Reducing Warranty Claim Rejections

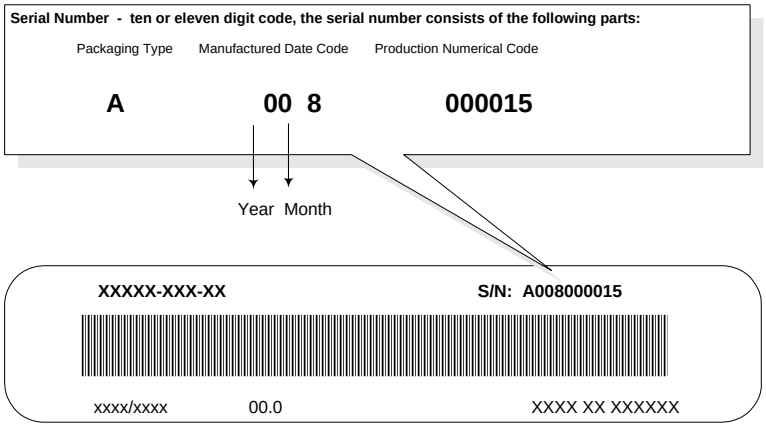
To reduce the potential of incurring damages not covered by Manufacturers warranties, we strongly recommend the following:

- Read your manuals before installing peripherals and/or before making changes to the machine's configuration;
- Ask your dealer if there are any known problems with the system requirements or installation procedures for any add-on products that your are purchasing;
- Buy industry standard products where compatibility issue are less likely to surface;
- If you are unsure about installation for a new product, contact your dealer's service department.

We believe it is important for you to know and understand what your warranty coverage provides and what it does not.

We also want you to be aware that most hardware warranties only relate to the function of the hardware. In most cases, no assurances are given by the manufacturer that the hardware item will work in conjunction with any other hardware item. If a computer product is not working because it is not compatible with another product, or because it has not been properly installed and set-up, the manufacturer does not pay for the service time. To help avoid these inconveniences, contact a professional consultant that one can help you determine the possibility of incompatibility issue before you purchase add-on or accessories.

## Warranty Service Use Only




**Product Label and Manufactured Date Code**